

ABSTRACT

The present invention aims to provide a two-dimensional photonic crystal having an optical resonator, which allows the control of the front/back emission ratio of light. To achieve this object, a refractive index member (13) made of a material having a refractive index different from that of air is mounted on a two-dimensional photonic crystal having a body (11) in which holes (12) are periodically arranged. In this construction, the body (11) and the refractive index member (13) cooperatively function as an optical resonator located at the position where the refractive index member (13) is mounted. The light emitted from this optical resonator is stronger on the side having a higher refractive index, i.e. on the side where the refractive index member is mounted. Accordingly, the light (191) emitted from the side where the refractive index member (13) is mounted is stronger than the light (192) emitted from the other side. The ratio of the emission intensity of the two rays of light (191) and (192), i.e. the front/back emission ratio, can be controlled by changing the material, shape and/or size of the refractive index member.